CONTROL 4G

2 / 4 - CHANNEL GSM RECEIVER

manual ver.1.0



automation systems
www.dtm.pl

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1. GENERAL INFORMATION

CONTROL 4G is a 2/4-channel receiver, equipped with an LTE module operating in 4G and 2G mobile networks, enabling remote control of the automation devices using a telephone.The control is performed using a CLIP (Calling Line Identification Presentation) connection, sending an SMS with an appropriate command or via a dedicated Control GSM Widget application for Android devices.

Management of the receiver is performed using a MemoManager application (version 2.1a) and MEMO service programmer, or via SMS sent to the SIM number of the receiver. In order to simplify the configuration of the device, it is recommended to use the dedicated applications Control GSM (available on the manufacturer's website) and Control GSM Basic (available in the Google Play store). The applications allow you to configure and control the receiver in a simple and intuitive way without the need to manually enter commands.

The receiver has two relay outputs for connecting automation devices. Additionally, it is equipped with 3 information inputs for connecting automatics status sensors (e.g. limit switch).

It is possible to extend the functionality of the receiver with two additional radio transmitting channels, operating at 433MHz or 868MHz, by connecting an additional 2CS or 2CS868 radio module, available as an option from the manufacturer. The module works as a two-button radio transmitter, enabling control of the DTM433MHz or DTM868MHz series receivers from the phone.

2. TECHNICAL DATA

power supply	12 ... 24V AC / DC ± 10%
current consumption	500mA
memory capacity	4000 subscribers (including 1 super administrator and 4 adminstrators)
receiver relay outputs (type / quantity / maximum load)	NO or NC / 2 / 1A 24V AC or DC
radio outputs	2, optional 433MHz radio module or 868MHz
information inputs	3, programmable NO / NC type, minimum violation time 100ms
operation mode of outputs	monostable (CLIP, SMS control), bistable (control only by SMS)
back-up time adjustment in monostable mode	1s to 65535s, with a resolution of 1s
supported technology	4G / 2G
mobile network frequency	700 / 800 / 900 / 1800 / 2100 / 2600 MHz
antenna	omnidirectional rod antenna with 3dBi gain, terminated with a male SMA plug; (GSM-3G, broken bar, 850/900/1800/1900/2100 MHz), the transition antenna cable terminated with a U.FL female plug and an SMA female socket.
operating temperature	-20°C / +55°C
installation	outdoor installation in splash-proof IP-54 plastic housing or in housings of other devices
external dimensions of the housing / receiver plates (width x length x height	72x132x41mm / 58x88x27mm

3. CONSTRUCTION, ASSEMBLY AND INSTALLATION

3.1 Construction of the receiver

The receiver consists of a splash-proof surface-mounted housing with a screw-in GSM antenna and a main board. The main board (Fig. 1) has an executive system based on two relays and screw connections for connecting the supply voltage, controlled devices and sensor outputs. There is a memory on the board on the socket. Placing the module on the socket makes it easier to transfer the memory to another receiver, for example in the event of a device failure. The memory contains receiver configuration data and a database of saved user numbers.

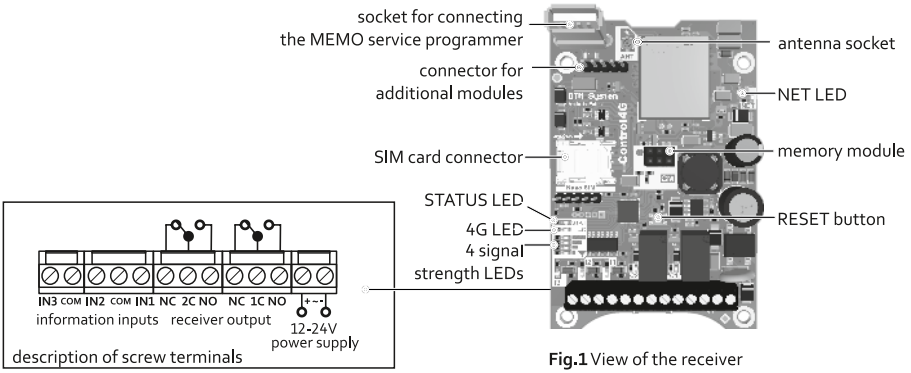


Fig.1 View of the receiver with the description of the pins

3.2 Assembly of the receiver

The receiver is delivered in a dedicated IP-54 surface-mounted housing intended for outdoor installation. Make sure that the device is installed in places where GSM coverage is reliable. The receiver's communication with the GSM network is indicated by the NET diode lighting. Connection to the 4G network is signaled by the 4G LED lighting up, and when the 4G LED goes off, it means that the receiver is connected to the 2G network. The GSM network coverage is indicated by four signal strength LEDs on the receiver's board (Fig. 1). Operation at the edge of the range may have a negative impact on the correct operation of the device. The receiver is factory-equipped with a GSM antenna. In case of poor coverage of the GSM network, an external antenna should be used instead of the one supplied with the receiver. The antenna should not be installed inside metal casings of barriers, etc. It should be mounted as high as possible.
The receiver can also be mounted directly in the housing of another device.

Before mounting the receiver, mount the GSM antenna (Fig. 2).
Correct installation should be performed in accordance with the points below.
Step 1: Remove the receiver board from the housing.
Step 2: Prepare the opening in the housing. Break out (e.g. with a screwdriver) the weakening in the upper right corner (Fig. 2a).
Step 3: Put the antenna cable through the hole with the washer and O-ring on (Fig. 2b-1).
Step 4: Put the toothed washer and screw the nut onto the antenna socket protruding from the housing (Fig. 2b-2).
Step 5: Direct the connector at the end of the antenna cable to the right (Fig. 2b-3).
Step 6: Tighten the nut on the antenna socket with the power to guarantee stable positioning (Fig. 2c). Too weak tightening of the nut may cause leakage in the housing and incorrect positioning of the antenna cable.
Step 7: Fix the receiver board in the housing.
Step 8: Plug the end of the adapter cable into the antenna socket (Fig. 2-d) on the receiver board (Fig. 1). The antenna plug has the same potential as the neighboring elements, it is allowed to touch them.
Step 9: Install the antenna (Fig. 2e).

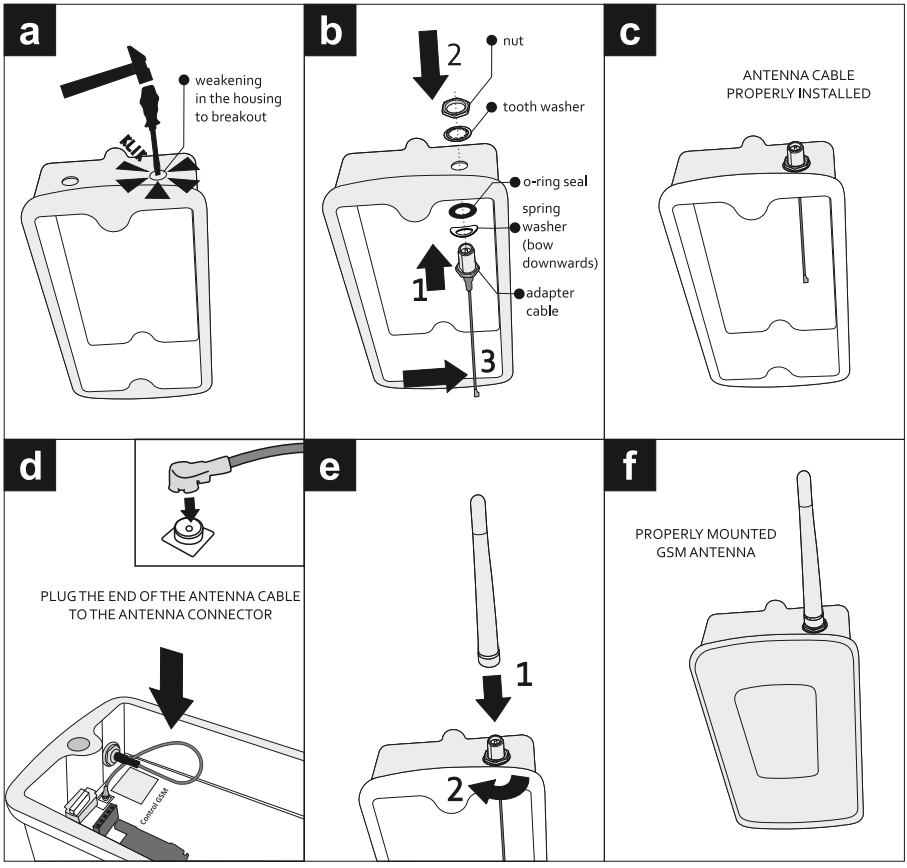


Fig.2 Installation of the GSM antenna in the receiver.

3.3 Connection of the receiver

The receiver has screw terminal blocks for connecting the power supply, controlled automation and sensor outputs.
The power cables should be connected to the terminals "+" and "-".
Connect the controlled devices to the OUT1 and OUT2 outputs of the receiver.
The sensor outputs (e.g. reed switches, limit switch) should be connected between the selected information input of the receiver and the common COM terminal.

All work related to the connection, installation and removal of additional modules must be performed with the power supply disconnected.

3.4 Installing the SIM card

Before starting the device for the first time, insert an active SIM card into the receiver connector.

The receiver supports nano SIM cards with dimensions of 12.3 x 8.8 mm.

Before inserting the card into the connector, clear the SMS memory and the telephone book. The card should have disabled PIN code and deactivated voicemail and additional services such as. notification that the number is in range. Preparation of the SIM card should be performed using a GSM telephone. The receiver works with prepaid SIM cards, but it is recommended to use subscription or telemetry cards. If you use a prepaid activation, you should take into account the possibility of blocking the card by the operator in the case of high frequency of sending SMS messages by the device. Such a situation may occur when manually adding a large number of subscribers or with high intensity of use of the receiver. In order to reduce the probability of blocking the SIM card by the operator, limit the frequency of sending SMS messages by the device (disabling the welcome SMS, disabling the confirmation function after the control SMS, disabling return SMS messages sent by the receiver).

The nano SIM card should be placed in the card connector on the receiver board (Fig. 3).
Step 1: Slide the card holder in the direction of the UNLOCK arrow on the receiver board to unlock the holder.
Step 2: Lift the unlocked handle upwards. Slide the card into the holder. Pay attention to the correct positioning of the card. The card should be placed with the print towards the holder, the cut corner on the left side, and the contacts towards the receiver board.
Step 3: Place the holder with the inserted card horizontally on the receiver board.
Step 4: Lock the card holder by pressing it against the receiver board and moving it in the opposite direction to the UNLOCK arrow.

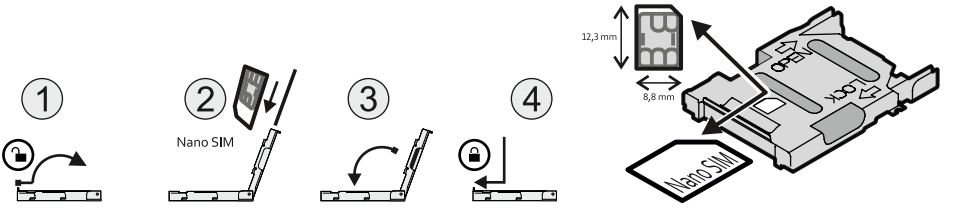
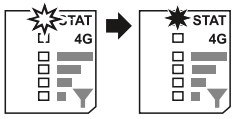


Fig.3 Installing the nano SIM card in the receiver connector.

A lit STATUS diode signals that the receiver is logged in to the GSM network. The signal strength is displayed on the range LEDs.

In case of any problems with logging into the GSM or other networks, errors are displayed by the STATUS LED and the signal strength LEDs.

Error signaling:



STATUS diode flashes 4 times, then lights up (and we do not receive SMS from the device)

- **the network rejects the sent SMSes.**

Probably no funds on the card or the validity of the account have expired.



the STATUS LED is flashing and the lowest LED of the signal indicator is on

- **no SIM card or a problem with its initialization**



the STATUS LED is flashing and the second signal indicator LED from the bottom is on

- **SIM card blocked (requests PUK, PUK2 code, or another lock is on (e.g. Antitheft)**



the lowest LED of the signal indicator flashes

- **memory problem (out of memory or memory damaged)**

4. RECEIVER MANAGEMENT

4.1 Receiver settings

4.1.1 Receiver output settings

The receiver has two relay outputs - channels 1 and 2, for connecting devices. In addition, the functionality of the receiver can be extended with two radio transmitting channels: channels 3 and 4 by installing a 2CS or 2CS868 module available as an option from the manufacturer.

The following parameters for the receiver outputs can be set:
- enable or disable channel operation
- setting a user-friendly name of the channel (e.g. Entrance Gate)
- setting the operating mode of channels 1 and 2 in monostable or bistable mode



In the monostable mode, the channel activation time can be set from 1s to 65535s, with a resolution of 1s. The transmission channels 3 and 4 of the optional radio module are permanently set in monostable 1s. Control by means of CLIP is possible only in the case of channels operating in the monostable mode. Bistable channels can only be controlled via SMS and the ControlGSM and ControlGSM Widget applications.

4.1.2 Receiver input settings

The receiver is equipped with three information inputs for connecting sensors, e.g. a limit switch.

The following parameters of the receiver information inputs can be set:
-the user-friendly name of input n
- NO or NC input type
- setting the receipt of an SMS notifying and the content of the notification about the transition of the input from the inactive state to the active state and SMS notifying about the transition of the input from active to inactive state (option available only for users with Super Administrator and Administrator status).

4.1.3 Settings of receiver control methods

The receiver is controlled by a telephone. The control is done by making a CLIP connection or sending an SMS.

You can set the following ways to control the receiver:
- receiver control by all users (guests and subscribers) or only users added to the memory (subscribers)
- CLIP control for "guest" with or without password for outputs 1 ... 4, only for channels operating in the monostable mode
- SMS control for "guest" with or without password for outputs 1 ... 4
- setting to receive notification about delivered control SMS
- setting the receipt of a return SMS with the current status of outputs and inputs

4.1.4 Factory settings. Format the receiver



Formatting the receiver restores the receiver to its factory settings and removes all subscribers from the receiver list.

The receiver can be formatted using the RESET button on the receiver's board. To format the receiver, press and hold the RESET button for 8 seconds. Release the button when the "running line" effect starts (signal strength LEDs).

Formatting of the receiver can also be performed via the Control GSM and Control GSM Basic applications and via SMS command sent to the receiver's SIM number.

Receiver factory settings:
- all receiver channels set in monostable mode with a switching time of 1 second
- all inputs of NO type
- receiver control only by users added to memory (channel control disabled for "guest" users)
- no user-friendly names for output and input channels
- enabled SMS confirmation presenting the current statuses of outputs and inputs for users added to the receiver's memory
- no users and administrators saved in memory
- the ability to configure the receiver from any number by entering the password in the configuration SMSes: #admin

4.2 Receiver configuration

The receiver is configured using the MEMO service programmer and a dedicated program to operate the MEMO MANAGER programmer, available on the manufacturer's website www.dtm.pl.
Configuration can also be done using SMS messages sent to the receiver's number.
In order to simplify the configuration of the device, it is recommended to use the dedicated applications Control GSM (available on the manufacturer's website) and Control GSM Basic (available in the Google Play store). The applications allow you to configure and control the receiver in a simple and intuitive way without having to manually enter the commands in the phone's SMS outbox.
Depending on the firmware version, there may be differences in the operation of some functions. Refer to the command tables for notes. The current version of the receiver firmware can be checked using the ControlGSM application, by downloading the data using the MEMO programmer and checking them in the MemoManager application or by using the "GET" SMS command (Frm = x in the return SMS, where x is version).

4.2.1 Configuration using the MEMO service programmer and MEMO MANAGER software

The fastest way to configure the receiver parameters and to add subscribers to the memory is to use the DTM System MEMO service programmer and the MEMO MANAGER software, from version 2.1a, available for download on the manufacturer's website www.dtm.pl.
Configuration consists in creating, using the MEMO MANAGER program, a file with receiver settings and then uploading it to the receiver's memory. Saving (uploading) the settings file consists in connecting the MEMO programmer to the Control GSM receiver with the USB cable and pressing the WRITE button.
The clear interface of the MEMO MANAGER program allows for an intuitive configuration of the receiver.
From the "Receiver settings" tab it is possible to:
- configure of receiver inputs,
- configure receiver outputs,
- setting passwords and receiver control methods for guest users,
- SMS notification setting,
- setting friendly names.

There is also the "Subscribers" tab, which allows you to enter subscriber data in a convenient and fast way manually or from a .CSV file.

4.2.2 Configuration using the Control GSM and Control GSM Basic applications

The receiver can be configured by means of SMS commands sent to the receiver's number. In order to simplify the device configuration using SMS commands, it is recommended to use the dedicated applications Control GSM (available for download on the manufacturer's website www.controlgsm.dtm.pl) or Control GSM Basic (available in the Google Play store).

The applications allow you to configure and control the receiver in a simple and intuitive way without having to manually enter the commands in the phone's outbox.
When you start the Control GSM and Control GSM Basic applications for the first time, enter your phone number on the first screen.
When adding a new receiver to the list in the application, enter the telephone number of the Control 4G receiver.
During the first configuration of a new receiver, add your number to the device's memory, granting administrator rights and setting a new password.
The default password on the first use of the application is "admin".

4.2.3 Configuration via SMS commands sent to the receiver number
The receiver can be configured via SMS commands sent to the receiver number.
The configuration SMS must always start with the # character and contain the password ending with a comma: #HASLO, then enter the two-part commands <parameter> = <value> separated by a comma.

The size of the characters does not matter for commands and parameters.
Data Format:

#PASSWORD,<parameter1>=<value>,<parameter2>=<value>,<paramenterN>=<value>

Example: #password,sms1=1,clip1=0,time1=30

If no user with administrator status has been added yet, the password is "#admin".
In this case, anyone can modify the settings using this password. From the moment you add a user with administrator privileges, only this number can be used to configure the receiver.

It is recommended to start working with the receiver by adding your own number with administrator rights.

- adding a phone number of a user with administrator privileges

ADD=user_number,VIP="password"
password - up to 16 characters, without diacritics and special signs
Example: # admin, ADD = 48123456789, VIP = "stefek70
From this point, the user number 48123456789 has administrator privileges.
To configure the receiver from its number it is necessary to enter the password # stefek70 before the commands. The password is case sensitive. The administrator can add another 4 administrators using the above command.

- removing administrator rights

MOD=administrator_numer,VIP=""
Example: #stefek70,MOD=48987654321,VIP=""

The configuration commands with description, notes and examples are presented in table 1.

PARAMETER	COMMAND	COMMENTS	EXAMPLE
SETTING THE RECEIVER OUTPUTS			
setting the operating mode of channel n in monostable mode	**TIMEn=time**	time - from 0 to 65535 seconds n - channels 1 and 2 ! The transmission channels 3 and 4 of the optional radio module are permanently set in monostable 1s	#password,TIME1=20
setting the operation of channel n in bistable mode	**TIMEn=0**	n - channels 1 and 2 control only by SMS	#password,TIME1=0
setting friendly name of output n	**NameOUTn="name"**	n - channels 1 ... 4 name - up to 20 characters (without diacritics and special signs)	#password,NameOUT1 ="Entrance gate"
disabling of channel n	**STOPn=1**	n - channels 1 ... 4	#password,STOP1=1
enabling of channel n	**STOPn=0**	n - channels 1 ... 4	#password,STOP1=0
SETTING THE RECEIVER INPUTS			
setting the idle state of input n as normally open NO	**TYPEn=NO**	n - information inputs 1 ... 3	#password,TYPE1=NO
setting the idle state of input n as normally closed NC	**TYPEn=NC**	n - information inputs 1 ... 3	#password,TYPE1=NC

SMS configuration commands

setting a user-friendly name for input n	**NameINn="name"**	n - information inputs 1 ... 3 name - up to 20 characters (without diacritics and special signs)	#password,NameIn1= "Gate status"
setting the content of the SMS notification with information about the transition of input n from the inactive state to the active state*	**SmsONn="content"**	n - information inputs 1 ... 3 content - up to 60 characters (without diacritics and special signs)	#password,SmsON1= "Gate open"
restoration of the default content (INn = ON) of the SMS notification with information about the transition of input n from the inactive state to the active state*	**SmsONn=""**	n - information inputs 1 ... 3	#password,SmsON1=""
setting the content of SMS notification with information about the transition of input n from active to inactive state*	**SmsOFFn="content"**	n - information inputs 1 ... 3 content - up to 60 characters (without diacritics and special signs)	#password,SmsOFF1= "Gate closed"
restoration of the default content (INn = OFF) of the SMS notification with information about the transition of input n from active to inactive state*	**SmsOFFn=""**	n - information inputs 1 ... 3	#password,SmsOFF1=""

* Receiving SMS notifications about changes in the status of information inputs is available only to users with the Administrator status.

NOTIFICATION SETTINGS			
switching on the response received via SMS informing about the current status of inputs and outputs of the receiver, after each control SMS	**AutoStatus=1**		#password,AutoStatus=1
switching off the response received via SMS informing about the current status of inputs and outputs of the receiver, after each control SMS	**AutoStatus=0**		#password,AutoStatus=0
switching on the OK or ERROR response, received via SMS, informing about successful or unsuccessful channel activation, after each control SMS	**AutoAck=1**		#password,AutoAck=1
switching off the OK or ERROR response, received via SMS, informing about successful or unsuccessful channel activation, after each control SMS	**AutoAck=0**		#password,AutoAck=0
setting the language of the notification SMS sent to the subscriber after adding him to the receiver	**LANG=PL/EN/DE**	PL - Polish, EN - English, DE - German	#password,LANG=EN
enabling SMS sending to the subscriber with information about adding to the receiver and the available control methods	**UserNotify=1**	By default, sending an SMS with information about being added is enabled.	#password,UserNotify=1

SMS configuration commands

disabling SMS sending to the subscriber with information about adding to the receiver and available control methods, disabling on-demand downloading of the status of inputs and / or outputs and information on control methods	**UserNotify=0**	blocks the operation of the STATUS and GETCONFIG commands disables the operation of the inputs/outputs status widget	#password,UserNotify=0
enable silent mode - disable SMS to the administrator after the configuration command	**Silent=1**		#password,Silent=1
disable silent mode - enable SMS to the administrator after the configuration command	**Silent=0**		#password,Silent=0
SETTINGS OF THE CONTROL WAYS FOR THE "GUEST" USER			
enabling control of channel n using CLIP for "guest" type users	**CLIPn=1**	n - channels 1 ... 4 only when channel n works in monostable mode, among the channels 3 and 4 of the optional radio module, only one can be triggered by CLIP assigning channels 3 and 4 will cause only channel 3 to be triggered	#password,CLIP1=1
disabling control of channel n using CLIP for "guest" type users	**CLIPn=0**	n - channels 1 ... 4	#password,CLIP1=0
enabling control of channel n using SMS for "guest" type users	**SMSn=1**	n - channels 1 ... 4	#password,SMS1=1
disabling control of channel n using SMS for "guest" type users	**SMSn=0**	n - channels 1 ... 4	#password,SMS1=0

SMS configuration commands

setting a password for the guest when controlling CLIP	**ClipPass="content"**	content - only digits 0... 9, maximum 16 digits	#password,ClipPass= "123"
disabling the guest password when controlling CLIP	**ClipPass=""**		#password,ClipPass=""
setting a password for the guest when controlling SMS	**SmsPass="content"**	content - numbers and letters without diacritics and special signs, up to 16 characters	#password,SmsPass= "abc123"
disabling the password for the guest when controlling SMS	**SmsPass=""**		#password,SmsPass=""
PREVIEW OF RECEIVER SETTINGS			
receiver configuration parameters (methods of channel control, channel operation mode settings, setting the idle state of information inputs, settings for receiving return SMS from the device after control SMS, number of subscribers and administrators added)	**GET**		#password,GET
user-friendly names of receiver inputs and outputs	**GETNAMES**		#password,GETNAMES

SMS configuration commands

FORMATING THE RECEIVER			
formatting the receiver, restoring factory settings	**Format=0417**	Formatting the receiver restores the receiver to its factory settings and removes all subscribers from the receiver list.	#password,Format=0417
CONFIGURING PARAMETERS OF USERS ADDED TO THE RECEIVER'S MEMORY (ADMINISTRATOR, SUBSCRIBER)			
The following phone number formats can be used when adding or modifying users: + CCAAAAAAAAA (e.g. +48123456789) 00CCAAAAAAAAA (e.g. 0048123456789) CCAAAAAAAAA (e.g. 48123456789) It is not allowed to use numbers without a country prefix (e.g. 123456789). A number entered without a national prefix will be accepted by the device but will not be recognized by it. When entering individual settings, it is necessary to enter the subscriber's telephone number in the configuration SMS. Using the ADD command, you can add up to 20 users at a time, separating the numbers with a comma. If you try to add more than 20 numbers, the receiver will not add any. When adding multiple numbers at the same time, welcome SMS messages are not sent. By means of multiple adding, you cannot add admins and the parameters available only to them are ignored. If, when **adding** a users to the receiver's memory, a given parameter is not given, the given function will be disabled. If a given parameter is not given when **modifying** a user from the receiver's memory, the given function will remain unchanged.			
COMMANDS			
adding a users to the receiver's memory	**ADD=telephone_number,telephone_number,<parameter1>=<value>,<parameter2>=<value>,<parameterN>=<value>**	max. 20 numbers simultaneously separated by commas, the number already in memory is skipped during addition	#password,ADD=481234 56789,48123456789,CLIP1 =1,SMS2=1,STATUS1=1
modifying the settings of a user added to memory	**MOD=telephone_number,<parameter1>=<value>,<parameter2>=<value>,<parameterN>=<value>**		#password,MOD=4812 3456789,clip1=0,sms1=1

SMS configuration commands

modifying the parameters of all users entered in the memory	**MODALL,<parameter1>=<value>,<parameter2>=<value>,<parameterN>=<value>**	you cannot change the VIP parameter or other parameters available only to administrators, superadmin changes the settings of all users, admin all except the superadmin	#password,MODALL, clip1=0,sms1=1
removing the user from the receiver's memory	**DEL=telephone number**		#password,DEL=48123456789
removing administrators from memory CAN ONLY BE PERFORMED BY A SUPER-ADMINISTRATOR	**DELADMINS**		#password,DELADMINS
user number change	**REP=old number,new number**		#password,REP=48123456789,48987654321
removing all users from the receiver's memory	**DELALL**		#password,DELALL
downloading parameters of an added subscriber	**GET=telephone number**		#password,GET=48123456789
PARAMETERS FOR ADD, MOD, MODALL AND AUTOADD COMMANDS			
giving the user administrator rights	**VIP="password"**	password - up to 16 characters, without diacritics and special signs	#password,MOD=48123456789,VIP="stefek70"
removing administrator rights	**VIP=""**		#password,MOD=48123456789,VIP=""
enabling the subscriber to control the n channel using CLIP	**CLIPn=1**	n - channels 1 ... 4 only for n channels working in monostable mode, of the channels 3 and 4 of the optional radio module, only one can be triggered CLIP, assigning channels 3 and 4 will cause that only channel 3 will be triggered	#password,MOD=48123456789,CLIP1=1

disabling control of the n channel for the subscriber using CLIP	**CLIPn=0**	n - channels 1 ... 4	#password,MOD=4812 3456789,CLIP1=0
enabling the subscriber to control the n channel using SMS	**SMSn=1**	n - channels 1 ... 4	#password,MOD=4812 3456789,SMS2=1
disabling the subscriber to control the n channel using SMS	**SMSn=0**	n - channels 1 ... 4	#password,MOD=4812 3456789,SMS2=0
enabling the right to use the function of viewing the status of information input n on request	**STATUSn=1**	n - information inputs 1 ... 3	#password,MOD=4812 3456789,STATUS1=1
disabling the right to use the function of viewing the status of information input n on request	**STATUSn=0**	n - information inputs 1 ... 3	#password,MOD=4812 3456789,STATUS1=0
enabling the receipt of SMS notifications about the transition of the information input n from the inactive state to the active state (ONLY FOR ADMINISTRATORS)	**INnACT=1**	n - information inputs 1 ... 3	#password,MOD=4812 3456789,IN1ACT=1
disabling the receipt of SMS notifications about the transition of the information input n from the inactive state to the active state (ONLY FOR ADMINISTRATORS)	**INnACT=0**	n - information inputs 1 ... 3	#password,MOD=4812 3456789,IN1ACT=0

SMS configuration commands

enabling the receipt of SMS notifications about the transition of the information input n from active to inactive state (ONLY FOR ADMINISTRATORS)	**INnDEACT=1**	n - information inputs 1 ... 3	#password,MOD=48123456789,IN1DEACT=1
disabling the receipt of SMS notifications about the transition of the information input n from active to inactive state (ONLY FOR ADMINISTRATORS)	**INnDEACT=0**	n - information inputs 1 ... 3	#password,MOD=48123456789,IN1DEACT=0
AUTOMATIC ADDING OF SUBSCRIBERS TO THE RECEIVER'S MEMORY			
switching on the automatic adding subscribers mode	**AUTOADD=PIN,TIME=time,optional_parameters**	PIN - 4 digits, range 0 ... 9 time - function activation time, given in hours, maximum 48 optional_parameters (subscriber parameters)	#password,AUTOADD=1234,time=12,clip1=1,sms1=1,status1=1
switching off the automatic adding subscribers mode	**AUTOADD=0**		#password,AUTOADD=0
downloading of the automatic adding subscribers' mode settings	**GETAUTO**		#password,GETAUTO

Table.1 SMS configuration commands.

4.3 Users

The receiver can be controlled by users added to the receiver's memory (super administrator, administrators and subscribers) and / or users who know the receiver's number and the control password, if it is set, but their numbers are not added to the memory ("guest" users)..

User permissions

Super administrator

The super administrator's phone number is added to the receiver first. Super administrator has the same rights as Administrators, but additionally:
- cannot be deleted by the administrator,
- removing a super administrator is possible only after removing all administrators.

Administrator

The administrator's phone number must be added to the receiver's memory. The maximum of administrator rights can have 4 users.
The administrator has the right to:
- configure receiver settings,
- adding / removing administrators,
- adding / removing / modifying subscriber settings,
- receiving notification of activation and / or deactivation of information inputs,
- control the receiver.

Administrators cannot delete and modify their own numbers, other administrators can do it.

Subscriber

The subscriber's telephone number must be added to the receiver's memory. The receiver's memory allows for the addition of 4000 subscribers.
The subscriber has individual settings entitling him to:
- control the receiver according to the settings configured by the administrator,
- receiving a response about the success or failure of the delivery of the control SMS,
- receiving the current status of inputs and outputs of the receiver after a control SMS or on request.

Guest

Guest is a user whose number has not been added to the receiver's memory. He knows the receiver's telephone number and the password necessary to control the receiver, if set.
In order for the guest to be able to control the receiver, the administrator must enable the control for the guest.
The guest does not receive any return SMS.
The ability to control the receiver by guest users requires that channel control be enabled for guest users. By default, guest control of the receiver is disabled.

4.4 Adding subscribers

Subscribers can be added to the receiver using the MEMO service programmer and the MEMO MANAGER program and via SMS commands entered directly into the phone's outbox or through dedicated applications Control GSM and Control GSM Basic. When using SMS commands, there are two methods of adding subscribers to the receiver - manual and automatic.

4.4.1 Adding subscribers using the MEMO service programmer and the MEMO MANAGER program

This is the fastest method of adding subscribers to the receiver. It consists in creating a file with the list of subscribers and the configuration of the receiver in the MEMO MANAGER program and then saving the file in the receiver's memory. The file is saved by connecting the programmer to the receiver with the USB cable and pressing the WRITE button.
Please note that this operation will not only replace the users in the receiver's memory, but also replace the receiver's settings with the settings from the uploaded file.

You can add, edit and delete subscribers from the "Subscribers" tab of MEMO MANAGER.
You can add manually by entering the data of each subscriber or use the CSV file import option.

To import a CSV file, create a new file and enter the edit option or edit an existing file. In the "Subscribers" tab, press "import subscribers from CSV file". A window will open in which you should select in turn: separator, column with description, column with telephone number and prefix number, and then press "Import". The numbers will be imported into the file.

The CSV file must contain in one line the user's telephone number and, if necessary, the subscriber's identification data. The information must be on one line, separated by a separator. The separators are:; ,. : (semicolon, comma, period, colon).
The .CSV file can be prepared in a spreadsheet, notebook, or other programs that allow you to save the file with such an extension.

4.4.2 Manual adding of subscribers using SMS commands, Control GSM and Control GSM Basic applications

It allows you to keep full control over the numbers that will be in the memory and will be able to control the receiver. Requires adding each subscriber number manually.

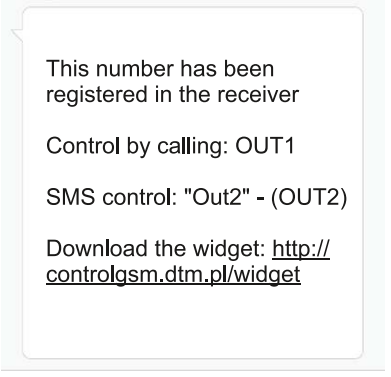
From the Control GSM or Control GSM Basic application, in the Subscribers - Manual tab, enter the subscriber's number and select the methods of channel control by marking the appropriate checkboxes.

Manual adding of subscribers is also possible via SMS commands sent from the telephone's outbox to the receiver's number.

The order of tasks in the procedure of manual adding of subscribers:
- set your own number as administrative
- configure the receiver parameters (setting the operating modes of channels, passwords, etc.)
- collecting users' phone numbers
- adding each of the numbers using the application or SMS command
- informing users about activities that they must perform to control the device via telephone (e.g. by posting an advertisement).

Each added subscriber will receive an SMS from the receiver number with information in Polish, English, or German about the successful adding of the number to the receiver's memory, available control options, and a link to download the Control GSM Widget application, available for Android devices.
If the option of sending an SMS informing about the addition is disabled in the receiver (UserNotify=0), the subscriber will not receive an SMS notifying about adding the number to the memory and information on possible control methods. When adding many numbers at the same time using the ADD command, welcome SMS messages are not sent to the added users, despite setting the UserNotify=1 option.

Example SMS:



The above example shows an SMS received by a manually added subscriber, for whom it is possible to control the OUT1 output with a free CLIP connection and control the OUT2 output by sending an ordinary SMS, payable according to the operator's rates.

EXAMPLE ANNOUNCEMENT MANUAL METHOD

Dear Sir or Madam

from August 20, 2019, it will be possible to open the gate at Brzeska Street and the gate at Lidzbarska Street using a smartphone.

What to do:

- you will receive an SMS from the number **+ 48xxxxxxxxx**
- add the number to the contacts on your smartphone

For users with **Android smartphones**:

- download and install the widget from the link of the received SMS
- in the widget configuration window, enter the number of the SMS sender and click "Next" (do not enter the PIN!)
- select an available gate and validate
- choose the color of the icon, you can also change its description
- use the widget to open the gate at Lidzbarska Street *
- make a call to the number given above to open the gate at Brzeska Street **

For users with **smartphones other than Android system**:

- send an SMS with the text **OUT2** to the number given above to open the gate at Lidzbarska Street *
- make a call to the number given above to open the gate at Brzeska Street **

* regular SMS will be sent, payable according to the operator's price list
** free call

EXAMPLE ANNOUNCEMENT MANUAL METHOD

Dear employees

From June 20, 2019, it will be possible to open the gate and wicket from Brzeska Street and the gate from Lidzbarska Street using a smartphone.

What to do:

- you will receive an SMS with the information that your telephone number has been registered in the receiver. The sender of the message will be the number **+48123456789.**

- Add the sender's number **+48123456789** to the phone book on your phone,

- You can **open the gate at Brzeska Street, sending SMS** to the above mentioned number* with the text "**out1**"

- You can **open the gate at Brzeska Street by calling** the above-mentioned number **

- You can o**pen the gate at Lidzbarska Street, sending SMS** to the above mentioned number * with the text "**out2**"

* regular SMS will be sent, payable according to the operator's price list
** free call

4.4.3 Automatic adding of subscribers using SMS commands, Control GSM and Control GSM Basic applications

It allows to minimize the time that the installer has to spend on adding a large number of subscribers to the receiver's memory. It consists in starting the automatic mode of adding subscribers.
After activating the mode, for the time specified by the installer, each new user who sends an SMS with the PIN number set by the installer will be automatically added to the receiver's memory with the settings specified when activating the mode.

The automatic adding mode can be started in the Control GSM and Control GSM Basic applications in the Subscribers - Automatically tab. In the application window, enter the PIN that the users will send in the SMS message to the receiver number, the mode activation time in hours, and define the parameters for the users (methods of channel control, information input numbers, the status of which is to be visible to the subscriber after sending the control SMS).

The mode can also be started by SMS commands sent from the telephone's outbox to the receiver's number.

- switching on the automatic adding subscribers mode

AUTOADD=PIN,TIME=time,optional_parameters
PIN - 4 digits, range 0...9
time - function activation time, given in hours, maximum 48
optional_parameters
Example: #password,AUTOADD=1234,time=12,clip1=1,sms1=1,status1=1

- switching off the automatic adding subscribers mode

AUTOADD=0
Example:#password,AUTOADD=0

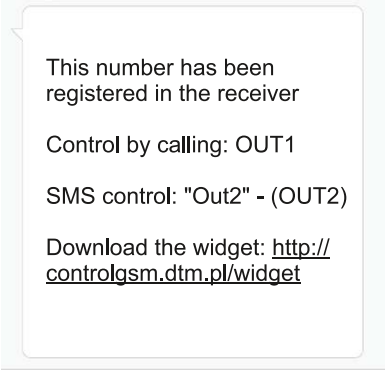
downloading the settings of automatic adding subscribers mode

GETAUTO
Example: #password,GETAUTO

The order of tasks in the procedure of automatic adding of subscribers:
- setting your own number as administrative
- configuration of receiver parameters
- enabling automatic adding of subscribers from the application level or via SMS command
- informing users about activities that they must perform to control the device over the phone (e.g. by posting an advertisement).

Each subscriber who sends a PIN to the receiver's number will receive an SMS with information in Polish, English or German about the successful addition of the number to the memory, available control options and a link to download the Control GSM Widget application, available for Android devices.
If the option of sending an SMS informing about the addition is disabled in the receiver (UserNotify=0), the subscriber will not receive an SMS notifying about adding the number to the memory and information on possible control methods.

Example SMS:



The above example shows the SMS received by the subscriber who sent the correct PIN code to the receiver number. For this subscriber, it is possible to control the OUT1 output with a free CLIP connection and control the OUT2 output by sending an SMS, payable according to the operator's rates.

SAMPLE ANNOUNCEMENT AUTOMATIC METHOD

Dear Sir or Madam

from August 20, 2019, it will be possible to open the gate at Brzeska Street and the gate at Lidzbarska Street using a smartphone..

What to do:

- add the number **+ 48xxxxxxxxx** to the contacts on your smartphone

For users with **Android smartphones**:

- download and install the Control GSM Widget application





- in the widget configuration window, enter the above number and PIN: **1234** and click "Next"
- select an available gate and validate
- choose the color of the icon, you can also change its description
- use the widget to open the gate at Lidzbarska Street *
- make a call to the number given above to open the gate at Brzeska Street **

For users with **smartphones other than Android system**:

- send an SMS with the content **1234** to the number given above, you will receive an SMS confirming adding to the device's memory, from that moment you can open the gates
- send an SMS with the text **OUT2** to open the gate at Lidzbarska Street *
- make a call to the number given above to open the gate at Brzeska Street **

* regular SMS will be sent, payable according to the operator's price list
** free call

SAMPLE ANNOUNCEMENT AUTOMATIC METHOD

Dear employees

From June 20, 2019, it will be possible to open the gate and wicket from Brzeska Street and the gate from Lidzbarska Street using a smartphone.

What to do:

-- Add the number **+48123456789** to the phone book on your phone,

- In the above mentioned number send SMS * with the text "**1234**"

- you will receive an SMS with the information that your telephone number has been registered in the receiver.

- You can **open the gate at Brzeska Street, sending SMS** to the above mentioned number * with the text "**out1**"

- You can **open the gate at Brzeska Street by calling** the above-mentioned number **

- You can **open the gate at Lidzbarska Street, sending SMS** to the above mentioned number * with the text "**out2**"

* regular SMS will be sent, payable according to the operator's price list
** free call

5. RECEIVER CONTROL

The receiver is controlled by a telephone. Depending on the settings, the control can be done by CLIP connection with the receiver number, sending an SMS control command to the receiver number, or through a dedicated application for mobile devices with Android - Control GSM Widget.
Calls and SMS costs by network operator rates.

Control by means of CLIP is possible for channels operating in the monostable mode. Bistable channels can only be controlled via SMS and the Control GSM and Control GSM Widget applications.

Depending on the receiver settings, the control can be performed by the users added to the receiver's memory and the "guest" type users, who know the receiver number. Depending on the settings of the "guest", it may be necessary to enter a password.

5.1 CLIP connections

The receiver is controlled by making a connection to the receiver's number.
For **subscribers** making a CLIP connection, the receiver disconnects the connection after the first call and the channel is activated. This connection is free.
For **"guest"** users, in the event that no password is set, the receiver disconnects the connection after the first call and the channel is activated. This connection is free.
If the **password is set**, after making the connection, the "guest" type user will hear a sound signal (modulated, intermittent signal), after which the code must be entered from the telephone numeric keypad, ended with the # sign.
The user has 15 seconds from hearing the signal to enter the password.
A suitable sound signal will confirm the correctness of the operation:
- password accepted - intermittent signal,
- wrong password - continuous signal.

In case of a mistake in entering the password, press * and start entering the password from the beginning.

5.2. Control GSM Widget application for Android mobile devices

CONTROL
GSM Widget

The application is available for download from the manufacturer's website www.controlgsm.dtm.pl

The application is a convenient add-on for sending control SMSes. Thanks to the application installation, the user will not have to enter control commands manually in the phone's outbox.
The application allows for convenient and intuitive control of devices from the button on the phone screen. From the application level it is also possible to check the status of the receiver inputs and outputs. By clicking on a properly configured widget, the device will be activated or the user will receive information about the status of a given input or output in graphic form and in an SMS message.

Administrators are informed on an ongoing basis about any change in the state of inputs. Subscribers receive information on request by clicking on the appropriate widget. The guest cannot receive feedback from the receiver.

5.3 SMS control commands

The receiver is controlled by sending an SMS message to the receiver's number.

- switching on the n channel working in monostable mode

OUTn
n - channels 1...4
Example: OUT1

- switching on the n channel working in bistable mode

OUTnON
n - only for channels 1 and 2
Example:OUT1ON

- switching off the n channel working in bistable mode

OUTnOFF
n- only for channels 1 and 2
Example:OUT1OFF

- download status of the inputs and outputs of the receiver
(displayed statuses according to the rights of the subscriber)

STATUS
Example: STATUS

- downloading information on the available control options, according to the rights held by the subscriber

GETCONFIG
Example: GETCONFIG

If the password request is enabled for SMS control, the control command should be preceded by a password ending with a dot „."

password.command
Example: abc123.out1



If the possibility of downloading information on request is disabled in the receiver (UserNotify=0), the subscriber will not receive an SMS with information about the status of the receiver inputs and it will not be possible to retrieve information on the available control options.

6. SMS MESSAGES FROM THE RECEIVER

6.1 Messages sent from the receiver

The receiver sends back SMS messages.
Each configuration SMS is confirmed.
Control SMSes are confirmed only when the AutoAck option is enabled (OK or ERROR response after the control SMS) and / or the AutoStatus option is enabled (response with the current status of inputs and outputs after the control SMS).
The confirmation SMS may contain information about an error or about the success of the operation. In the case of confirming the configuration SMS, the number of parameters is given.

The content of the SMS with information about the change of the input state may be preceded by the '#' character. The last SMS related to a given input, marked with this sign, should be treated as the most recent.
In the case of multiple and quick changes of input states, messages can be grouped within a given input. They will then contain information about the number of state changes, e.g.
"# (4x) Lobby Door Open (IN1 = ON)"
„(4x) Lobby Door Closed (IN1 = OFF)"
The above example shows that the receiver registered 4-fold opening and 4-closing of the lobby door, with the door finally opened (the last SMS with the '#' sign indicates the current state of the input).

SMS messages from the device:

OK - response to the activation of the channel / channels when the AutoAck confirmation function is on. If the "AutoStatus" function is on, information on the current states of inputs and outputs is sent instead of OK.

OK (n params) - response to the configuration SMS, containing the number of correctly decoded parameters.

ERROR: Command not available - functional error, e.g. an attempt to disable a monostable channel, an attempt to control the channel without permission. The SMS can be a response to the control SMS (if the AutoAck option is enabled) or to the configuration SMS.

ERROR: Wrong syntax or password - invalid syntax or password. The SMS is a response to the control SMS (if the AutoAck option is enabled) or to the configuration SMS.

ERROR: Wrong syntax or password (or incoming SMS from operator) – the SMS may appear in the case of the notification service on the receiver card that the number is already in range or may be a response to the configuration SMS with incorrect syntax.

DATA CLEANED - message after formatting the receiver using the SMS command.

SUCCESSFULLY ADDED - message after successfully adding the subscriber to the list.

ERROR: Memory full - an attempt to add a subscriber when the memory is full.

ERROR: You can specify max. 20 numbers - trying to add more than 20 numbers at once.

ERROR: Already exists - an attempt to add the same number to the list of subscribers again.

ERROR: No subscribers - an attempt to modify parameters when there is no subscriber in the receiver's memory.

ERROR: Does not exist - attempt to modify or download parameters of a number that does not exist on the list.

SUCCESSFULLY MODIFIED - message after successful modification of the subscriber's settings.

MODIFIED ALL - a message after successful modification of all subscribers' settings when the operator is a superadmin or there is no admin in the receiver.

MODIFIED ALL EXCEPT SUPERADMIN - a message after successful modification of all subscriber settings when the operator is an admin or there is no admin in the receiver.

ALL SUBSCRIBERS DELETED - message after deleting the list with the DELALL command.

SUBSCRIBER DELETED - after successfully removing the subscriber from the list.

ERROR: No more VIP available - trying to add 6th administrator user.

AUTOADD ON - when the automatic adding function is enabled (additional information is also attached to the message).

AUTOADD OFF - when automatic adding is turned off or is finished due to time or device restart.

ERROR: Set yourself as an admin first - when you try to add a non-own number as the first administrator.

ERROR: Currently, you can not delete / modify yourself. Try from another admin - response when the command could deprive access to the receiver (e.g. there are 2 administrators and one of them tries to remove himself).

ALL ADMINS DELETED EXCEPT YOU - Reply to the DELADMINS command sent by the super administrator to remove all administrators from the receiver.

ERROR: You can not delete / modify super admin - response to an attempt to modify or delete a super admin.

ERROR: You have to delete all other admins first - response to an attempt to delete a super administrator, when other administrators are set on the device.

6.2 Disabling return SMS messages sent by the receiver

The receiver has the option of sending return SMS messages to users and administrators enabled by default. The messages inform the user about the successful control of the channel, about the current states of inputs and outputs, about errors in the command sent or about the lack of authorization to perform an action. Feedback is also sent to the administrator when configuring the receiver, thanks to which it is known whether the relevant parameters have been successfully changed.It is possible to minimize the number of SMSs sent by the receiver by disabling certain types of sent messages.

Commands for managing the return SMS messages:

AutoStatus=0
- disabling the automatic receipt of SMS with information on the status of inputs and / or outputs, after activating the channel by means of an SMS.

AutoAck=0
- disabling the automatic receipt of SMS with information about success or lack of success after activating the channel with an SMS.

UserNotify=0
- disable receiving SMS with information about adding a subscriber to the receiver and possible control methods,
- no possibility to download an SMS with the status of inputs and / or outputs,
- the inability to refresh the widget in the application informing about the status of inputs and / or outputs,
- no possibility to download an SMS with information about the control methods.

Silent=1
Enabling the Silent mode disables the sending of automatic SMS messages to the administrator, informing about the change of parameters, after each configuration command sent.The receiver will only respond to commands requesting information: GET, GETNAMES, GETAUTO and GET=subscriber_number.

7. MIGRATION FROM THE CONTROL GSM RECEIVER

Move the memory module to transfer subscribers and settings from the Control GSM receiver to Control 4G. In order to keep the same phone number, replace the SIM card, but remove the adapter, as the Control 4G receiver has a nano-SIM slot.
This migration operation is transparent to end users.
The same mobile application is used to operate the Control 4G receiver.

DISPOSAL

Electrical or electronic devices must not be disposed of with household waste. Proper disposal of the device makes it possible to preserve the Earth's natural resources for longer and prevents the degradation of the natural environment.

WARRANTY

The manufacturer DTM System provides devices that are operational and ready for use. The warranty is granted for a period of 30 months from the date of sale by the manufacturer. The warranty period is determined on the basis of the manufacturer's warranty seals identifying the production batch, placed on each product. To recognize the warranty, it is necessary to present the sales document. The manufacturer undertakes to repair the device free of charge if during the warranty period there were defects due to the fault of the manufacturer. The faulty device should be delivered to the place of purchase, enclosing copies of the proof of purchase and a short, unambiguous description of the damage. The cost of dismantling and assembling the device is borne by the user. The warranty does not cover the batteries in the remote controls, any damage caused by improper use, arbitrary adjustments, alterations and repairs, and damage caused by lightning, overvoltage or short circuit of the power supply network. Detailed terms and conditions of the guarantee are regulated by relevant legal acts.

CE DTM System hereby declares that the radio receiver complies with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the internet address.

www.dtm.pl

w w w . d t m . p l

DTM System
ul. Brzeska 7, 85-145 Bydgoszcz, Polska, tel. +48 52 340 15 83, www.dtm.pl